### PATENT COOPERATION TREATY

## **PCT**

# TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

	's or agent's file reference	FOR FURTHER ACTIO	N S	See Form PCT/IPEA/416					
Internation	nal application No.	International filing date (day	/month/year) I	Priority date (day/month/year)					
PCT/	AT2004/000442	15.12.2004		15.12.2003					
Internation	International Patent Classification (IPC) or national classification and IPC								
B01D	53/26, B01D53/06	, F24F3/14							
		,,							
Applicant									
EGGE	R, Horst								
1	under Article 35 and transmitted to the	he applicant according to Artic	•	ernational Preliminary Examining Authority					
2.	This REPORT consists of a total of	5	_ sheets, including the	his cover sheet.					
3.	This report is also accompanied by A	ANNEXES, comprising:							
	a. (sent to the applicant and	l to the International Bureau)	a total of 8	sheets, as follows:					
				ended and are the basis for this report and/or					
	Instructions).	ectifications authorized by this	Authority (see Rule	70.16 and Section 607 of the Administrative					
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental								
	Box.								
	b (sent to the International	Bureau only) a total of (indica	te type and number o	of electronic carrier(s))					
			:	, containing a sequence listing and/or tables					
	related thereto, in compute Section 802 of the Adminis	•	ated in the Suppleme	ental Box Relating to Sequence Listing (see					
4.	This report contains indications relat	ing to the following items:							
ן [	Box No. I Basis of the	e report							
	Box No. II Priority								
[	Box No. III Non-establ	ishment of opinion with regard	to novelty, inventive	e step and industrial applicability					
[	Box No. IV Lack of un	ity of invention							
	Box No. V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement								
	Box No. VI Certain do	cuments cited							
	Box No. VII Certain defects in the international application								
[	Box No. VIII Certain observations on the international application								
Date of su	ıbmission of the demand	Date o	of completion of this	report					
Name and	I mailing address of the IPEA/EP	Autho	rized officer						
Faccimile No.			hone No						

### International application No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

PCT/AT2004/000442

Box	No. I	Basis of the report					
1.		h regard to the language, this report is based on the internatio cated under this item.	nal application in the language in	which it	was filed, unless otherwise		
		This report is based on translations from the original language which is the language of a translation furnished for the purposition international search (Rule 12.3 and 23.1(b))			·		
		publication of the international application (Rule 12.4					
2	With	international preliminary examination (Rule 55.2 and, bregard to the <b>elements</b> of the international application, this		hoots wh	ich have been furnished to the		
2.	rece	regard to the <b>eternents</b> of the international application, this riving Office in response to an invitation under Article 14 ar report):					
		the international application as originally filed/furnished					
	$\boxtimes$	the description:					
		pages <u>6-11</u>			as originally filed/furnished .2005 with letter		
		pages* 1-5,5a	received by this Authority on	of 05	.07.2005		
		pages*	received by this Authority on				
	$\bowtie$	the claims:					
		nos.			as originally filed/furnished		
		nos.*		08.07	.2005 with letter		
		nos.* 1-12	received by this Authority on	of 05	.07.2005		
		nos.*	received by this Authority on				
	$\bowtie$	the drawings:					
		sheets 1/5-5/5			as originally filed/furnished		
		sheets*	received by this Authority on				
		sheets*	received by this Authority on				
	Ц	a sequence listing and/or any related table(s) – see Supplem	ental Box Relating to Sequence L	isting.			
3.	Ш	The amendments have resulted in the cancellation of:					
		the description, pages					
		the claims, nos.	the claims, nos.				
		the drawings, sheets/figs					
		the sequence listing (specify):					
		any table(s) related to sequence listing (specify):					
4.		This report has been established as if (some of) the amend they have been considered to go beyond the disclosure as fi					
		the description, pages					
		the claims, nos.					
		the drawings, sheets/figs					
		the sequence listing (specify):					
		any table(s) related to sequence listing (specify):					
*	If ite	em 4 applies, some or all of those sheets may be marked "sup	erseded."				

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Box	No. V			ticle 35(2) with regard to novelty, inventive step or industrial applicability; porting such statement	
1.	Statement				
	Novelty	(N)	Claims	1-12	YES
			Claims		NO
	Inventive	e step (IS)	Claims	1-12	YES
			Claims		NO
	Industria	l applicability (IA)	Claims	1-12	YES
			Claims		
2.	Citations and	d explanations (Rule 70	0.7)		
۷.				the following documents:	
	Kerere	ence is mac	ie co	the following documents:	
	D1:	US-A-4 687	7 573	(MILLER ET AL)	
		18 August	1987	(1987-08-18)	
	D2:	PATENT ABS	STRAC	IS OF JAPAN, vol. 011, no. 063	
		(C-406), 2	26 Fel	oruary 1987 (1987-02-26)	
		& JP 61 22	22523	A (P S KANKYO GIKEN KK),	
		3 October	1986	(1986-10-03)	
	D3:	PATENT ABS	STRAC	IS OF JAPAN, vol. 007, no. 011	
		(C-145),	18 Ja:	nuary 1983 (1983-01-18)	
		& JP 57 16	67718	A (NOBUKO TAMAOKI; others: 01),	
		15 October	r 1982	2 (1982-10-15)	
	D4:	US-A-4 711	1 097	(BESIK ET AL)	
		8 December	r 198'	7 (1987-12-08).	
	Docume	ent D1 is c	consid	dered to be the prior art closest to	
	the su	ubject matt	ter of	f claim 1. Said document discloses	
	all the features of the preamble of claim 1 (the				
	references in brackets are to document D1):				
	D1 dis	scloses a s	sorpt	ion element for a sorption-based	
	air-co	onditioning	g unit	for the dehumidification (see	
	columr	n 1, lines	17-19	o) of a space or an airflow, the	
				/	

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

sorption element being in the form of a tubular part (62) having a tubular cross section and a first open end and an opposing second open end (see figure 2), the first open end being delimited by a first air-permeable grating element (78; see figure 1 and column 9, line 29) and the second open end being delimited by a second air-permeable grating element (80; see also figure 2 and column 9, line 30), the grating elements being impermeable to a sorbent.

The subject matter of claim 1 therefore differs from the known sorption element in that the sorbent (3) is in the form of a granular bed, the sorbent (3) being distributed to a depth (31) that is less than the length (15) of the sorption element (1) in such a way that the sorbent (3) can be fluidised or vortexed by means of an airflow, in particular from below.

Thus, the subject matter of claim 1 is novel (PCT Article 33(2)).

The problem addressed by the present invention can consequently be regarded as that of improving the transfer of heat and mass.

The solution to the above problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)). The reasons are as follows:

in the light of the disclosure in the characterising part of claim 1, there is a far greater possibility of turbulence on the effective surface of the sorption medium.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

No such arrangement of the sorption agent, as a granular bed, is known from the available prior art nor can it be derived therefrom without inventive input. D1 proposes the use of a polymeric binding agent to solidify the sorption agent. This is also proposed in documents D2, D3 and D4.

Therefore, in view of the fact that the granular material can be fluidised or vortexed, a loose granular bed as proposed in claim 1 cannot be considered to have been disclosed in the prior art citations or rendered obvious thereby.

Claims 2 to 9 are dependent on claim 1 and, in consequence, likewise satisfy the requirements of the PCT in respect of novelty and inventive step. Claims 10 to 12 relate to a method for a sorption-based air-conditioning unit for the dehumidification and/or heating and/or cooling of a space or of an airflow, using a sorption element (1) as per one of claims 1 to 7 - optionally with a sorption system as per claim 8 or 9 - and, thus, likewise satisfy the requirements of the PCT in respect of novelty and inventive step.